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FEDERAL - STATE - PRIVATE COOPERATIVE

SNOW SURVEY and WATER SUPPLY FORECASTS
for
MONTANA & NORTHERN WYOMING

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE.
and
MONTANA AGRICULTURAL EXPERIMENT STATION

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UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

TO RECIPIENTS OF COOPERATIVE SNOW SURVEY AND WATER SUPPLY FORECAST REPORTS:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Fortunately, most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from fore-knowledge of the runoff.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, about 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1300 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

By relating snow survey measurements taken over a period of years to spring-summer runoff during the same period, relationships have been developed which make it possible to forecast seasonal runoff several months in advance of occurrence. In order to make a forecast, once a forecast relationship has been developed, the maximum snow water content at previously selected key snow courses is usually entered in the forecast relationship. More accurate forecasts are often obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast relationships.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	COOPERATING WITH	LOCATION
RIVER BASINS			
Colorado, Rio Grande and Platte-Arkansas	Monthly (Feb.-May)	Colo. Exp. Station	Ft. Collins, Colo.
Columbia *Includes Alaska*	Monthly (Jan.-May)		Boise, Idaho
Upper Missouri	Monthly (Feb.-May)	Mont.Agr.Exp.Station	Bozeman, Montana
West-Wide	Semi-Annually (Oct. 1 and Apr. 1)	Cooperators	Portland, Oregon
STATES			
Arizona	Semi-Monthly (Jan. 15-Apr. 1)	Salt R. Valley Water Users Association	Phoenix, Arizona
Nevada	Monthly (Feb.-Apr.)	Nevada State Engineer	Reno, Nevada
Oregon	Monthly (Jan.-May)	Ore.Agr.Exp.Station	Portland, Oregon
Utah	Monthly (Jan.-May)	Utah State Engineer Utah Agr.Exp.Station	Salt Lake City, Utah
Washington	Monthly (Feb.-May)	Wash. State Dept. of Conservation and Development	Spokane, Washington
Wyoming	Monthly (Feb.-June)	Wyoming State Engineer	Casper, Wyoming

Copies of the various reports may be secured from:
Head, Water Supply Forecasting Section
Soil Conservation Service
209 S.W. 5th Avenue, Portland 4, Oregon

PUBLISHED BY OTHER AGENCIES

OTHER SNOW SURVEY REPORTS		
British Columbia	Monthly (Feb.-June)	Comptroller, Water Rights Br., Dept. of Lands and Forests, Parliament Bldgs. Victoria, B.C.
California	Monthly (Feb.-May)	California Department of Water Resources, Sacramento, California

FEDERAL - STATE COOPERATIVE

SNOW SURVEYS and WATER SUPPLY FORECASTS

for

MONTANA AND NORTHERN WYOMING

(Upper Missouri and Upper Columbia River Basins)

Report Prepared by:

A. R. Codd
Hydraulic Engineer
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Soil Conservation Service
U. S. Department of Agriculture
and
Montana Agricultural Experiment Station
Bozeman, Montana

Report issued by:

H. D. Hurd
State Conservationist
of Montana

O. W. Monson
Irrigation Engineer
Montana Agricultural
Experiment Station

M. M. Kelso, Director
Montana Agricultural
Experiment Station

WATER SUPPLY OUTLOOK
FOR THE STATE OF MONTANA
as of
MARCH 1, 1958

The water supply for the Upper Missouri Basin in Montana is 81 percent average and 91 percent of 1957.

The water supply for the Columbia Basin in Montana averages 97 percent normal. The snow-pack is 4 percent larger than last season.

In all basins, soil under the snow is damp, wet and unfrozen.

Reservoir Storage is slightly below average for March first.

MISSOURI RIVER

JEFFERSON RIVER BASIN:

The 1958 snow-pack, as measured for March first, is 84 percent average and 94 percent of last year. As indicated by the March first Surveys, the southern portion of the Beaverhead Soil Conservation District will have about 10 percent less water than last season. The March snow-pack above Lima Reservoir is 15 percent below last season. Stream-flow estimates are shown on the stream-flow forecast sheets. The northern portion of Soil Conservation District 76 should fair better, where the flow from the Big Hole River is expected to be 90 percent average.

MADISON RIVER BASIN:

The March first Snow Surveys indicate a water supply approximately 88 percent average, with the inflow to Hebgen Lake about 14 percent below average for the April-September period. The water supply to the Madison Soil Conservation District from the Madison and tributary creeks should be approximately 25 percent less than last season.

GALLATIN RIVER BASIN:

The water supply for irrigated land appears to be 92 percent normal for this season. Snow Survey measurements indicate a slightly heavier pack than last season by 3 percent. The Gallatin River at Gateway is expected to flow 409,000 acre feet between April 1 and September 30, as compared to the average of 445,000 acre feet.

MISSOURI RIVER - continued

MISSOURI RIVER - Toston to Fort Benton:

The 1958 snow-pack on the tributaries to this reach of the river is 93 percent average and about 15 percent below last season's pack. It is anticipated that the April-September flow into Canyon Ferry Reservoir will be 79 percent average or 2,014,000 acre feet. The water supply for irrigation from small streams through the Townsend and Helena Soil Conservation District should be less than 15 percent. This season, the snow-pack on the Sun River above Gibson Reservoir is 18 percent below last year. The first estimate of inflow to this reservoir for the April-September period is 516,000 acre feet, or 98 percent normal. Last season's flow for this period was 531,000 acre feet. The March first estimate of flow into Fort Peck for the April-September period is 3,769,000 acre feet or 86 percent of the 1938-52 average. The April-July flow is expected to be 3,266,000 acre feet.

YELLOWSTONE RIVER BASIN:

The 1958 snow-pack in Yellowstone National Park is 78 percent normal and 76 percent of last season's pack. Irrigation from small streams from the Absarokee range in the Big Timber-Columbus Soil Conservation District is expected to be about 92-95 percent average flow. The March first estimate of flow from Rock Creek near Red Lodge is 94 percent average or 101,000 acre feet. The Clark Fork of the Yellowstone River Basin at Chance is estimated to flow 91 percent average during April through September, which is about 10 percent less than last season.

COLUMBIA RIVER

FLATHEAD BASIN:

Water content, basin-wise, of the snow-pack is about the same as last season and is 106 percent average. The March first estimate of probable inflow to Hungry Horse Reservoir for the April-September period is 2,030,000 acre feet or 99 percent average. It is anticipated that the April-July flow will be 1,927,000 acre feet; the April-June flow will be about 1,727,000 acre feet. These figures are about 103 percent of last season's flow.

CLARK FORK BASIN:

The snow water content is 12 percent higher than last season and 103 percent average. This healthy condition will assure a GOOD water supply from this stream. The snow cover over the Bitterroot River Basin and tributary streams is slightly lower, but still 92 percent average. The Blackfoot River will probably flow 114 percent average, which is the highest estimate of the tributaries to the Clark Fork system.

MONTANA STREAM-FLOW FORECASTS MARCH 1, 1958

The following summarized runoff forecasts are based principally on mountain snow cover and on the assumption that precipitation and temperature during the forecast period will be near average. Appreciable deviations from normal of temperature and/or precipitation during the forecast period will correspondingly modify these forecasts.

UPPER MISSOURI RIVER IN MONTANA	Seasonal Stream-Flow in Thousands of Acre Feet					
	FORECAST RUNOFF	% 15-Yr. AVG.	FORE-CAST PERIOD	Measured Runoff		1938-52 Average
				1956##	1955	
RED ROCK RIVER						
Monida (near) (1)	678	83	Apr-Sept	60	71	81
	636	84	Apr-July	58	66	76
BEAVERHEAD RIVER						
Barrats (at)	143	81	Apr-Sept	155	119	177
	108	81	Apr-July	122	87	134
BIG HOLE RIVER						
Melrose (near)	675	90	Apr-Sept	842	592	745
	624	91	Apr-July	796	548	687
JEFFERSON RIVER						
Sappington (at)	945	89	Apr-Sept	1045	793	1057
	839	89	Apr-July	967	725	938
MADISON RIVER						
West Yellowstone (near)	174	88	Apr-Sept	255	183	198
	133	88	Apr-July	200	136	151
Grayling (near) (2)	362	86	Apr-Sept	488	345	420
(Net inflow to Hebgen Lk)	287	86	Apr-July	402	274	333
McAllister (near) (3)	633	87	Apr-Sept	802	593	726
	510	87	Apr-July	671	481	585
GALLATIN RIVER						
Gateway (near)	409	92	Apr-Sept	499	350	445
	352	92	Apr-July	442	296	384
Logan (at)	418	87	Apr-Sept	512	384	478
	358	87	Apr-July	452	336	410
Hyalite Cr. R.S. (at) (7)	36.5	104	Apr-Sept	29	34	35
	31.2	104	Apr-July	25	29	30
MISSOURI RIVER						
Toston (at) (3)	2014	79	Apr-Sept	2345	1730	2535*
	1704	78	Apr-July	2098	1549	2191*
Fort Benton (at) (4)	3003	89	Apr-Sept	3131	2986	3381
	2531	88	Apr-July	2722	2557	2874
Virgelle (at) (4)	3621	90	Apr-Sept	3261	3708	4013
(Loma)	3091	90	Apr-July	2806	3232	3445
Zortman (near) (4)	3861	89	Apr-Sept	3588	4264	4357
	3286	88	Apr-July	3076	3698	3726
Ft. Peck Dam (below) (5)	3769	86	Apr-Sept	3290	3743	4362
	3266	89	Apr-July	2613	3049	3666
Williston, N. D.	9348	80	Apr-Sept	9625	9533	11750
	7845	78	Apr-July	8053	8304	10228

(1) Observed flow plus change in Storage in Lima Reservoir
(2) Observed flow plus change in Storage in Hebgen Lake
(3) Observed flow plus change in Storage in Hebgen and Ennis Lakes
(4) Observed flow plus change in Storage in Canyon Ferry
(5) Observed flow plus change in Storage in Canyon Ferry and Ft. Peck Reservoirs
(7) Observed flow plus change in Storage in Hyalite Canyon
(*) Less than 15 years in 1938-52 period. Average for 15 yrs. nearest the base period.
(##) Preliminary data furnished by U. S. Geological Survey, subject to correction

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MONTANA STREAM-FLOW FORECASTS MARCH 1, 1958

UPPER MISSOURI RIVER IN MONTANA	Seasonal Stream-Flow in Thousands of Acre Feet					
	FORECAST RUNOFF	% 15-Yr. AVG.	FORE-CAST	Measured Runoff 1956##	Measured Runoff 1955	1938-52 Average
SUN RIVER						
Net inflow to Gibson Reservoir	561	98	Apr-Sept	668	517	570*
	513	98	Apr-July	618	478	521*
MARIAS RIVER						
Shelby (near)	518	98	Apr-Sept	684	614	527
	476	99	Apr-July	617	561	482
JUDITH RIVER						
Utica (near)	27.3	68	Apr-Sept	18.4	29.2	39.8
	24.7	68	Apr-July	17.6	27.3	36.3
MUSSELSHELL RIVER						
Delpine (near)	6.0	88	Apr-Sept	4.8	3.6	6.8
	5.0	89	Apr-July	4.1	2.9	5.6
YELLOWSTONE RIVER						
Corwin Springs (at)	1608	86	Apr-Sept	2427	1527	1870
	1343	86	Apr-July	2099	1254	1556
Livingston (near)	1832	86	Apr-Sept	3219	1621	2134
	1513	85	Apr-July	2322	1298	1770
Billings (at)	3242	81	Apr-Sept	4788	2958	4025
	2784	81	Apr-July	4225	2549	3446
Miles City (at)	5047	79	Apr-Sept	6175	4381	6369
	4318	80	Apr-July	5324	3816	5421
Sidney (near)	5187	78	Apr-Sept	6114	4553	6648
	4494	78	Apr-July	5315	4082	5724
SHIELDS RIVER						
Wilsall (near)	27.7	69	Apr-Sept	36.4	29.2	40.1
	26.0	69	Apr-July	34.6	27.3	37.6
Clyde Park (at)	88	83	Apr-Sept	97.0	72.1	105.6
	82	84	Apr-July	94.2	67.0	98.0
ROSEBUD RIVER						
Absarokee (near) (8)	250	95	Apr-Sept	251.4	153.0	263.0
	201	95	Apr-July	207.6	124.5	211.9
STILLWATER RIVER						
Rosebud Cr. (above) (8)	306	92	Apr-Sept	359.9	243.1	330.8
	276	93	Apr-July	321.1	213.1	288.1
Absarokee (near) (8)	548	92	Apr-Sept	611.4	396.1	593.8
	461	92	Apr-July	528.7	337.6	500.0
ROCK CREEK						
Red Lodge (near)	101	94	Apr-Sept	134	71	107
	77	94	Apr-July	110	50	82
CLARK FORK RIVER						
Chance (at)	537	91	Apr-Sept	716	419	580
	481	93	Apr-July	660	386	517
Edgar (at)	576	93	Apr-Sept	773	422	614
	509	94	Apr-July	698	384	539

(##) Preliminary data furnished by U. S. Geological Survey, subject to correction

(*) Less than 15 years in 1938-52 period. Average for 15 years nearest the base period

(8) Observed flow plus change in Storage in Mystic Lake

MONTANA STREAM-FLOW FORECASTS MARCH 1, 1958

UPPER COLUMBIA RIVER IN MONTANA	Seasonal Stream-Flow in Thousands of Acre Feet					
	FORECAST RUNOFF	% 15-Yr. AVG.	FORE-CAST PERIOD	Measured Runoff 1956##	Measured Runoff 1955	1938-52 Average
CLARK FORK RIVER						
Bonner (above) (14)	714	92	Apr-Sept	880	739	771
	629	93	Apr-July	780	645	678
	524	90	Apr-June	695	428	583
Missoula (above)	1686	105	Apr-Sept	2012	1590	1602
	1505	105	Apr-July	1817	1386	1429
	1280	104	Apr-June	1622	994	1229
Missoula (below)	3082	104	Apr-Sept	3960	3094	2971
	2810	104	Apr-July	3654	2804	2700
	2462	105	Apr-June	3290	2070	2335
St. Regis (at)	4153	105	Apr-Sept	5749	4201	3951
	3767	105	Apr-July	5326	3775	3588
	3335	107	Apr-June	4817	2843	3112
Plains (near) (15)	10746	100	Apr-Sept	15138	11038	10747
	9812	100	Apr-July	14070	10018	9813
	8434	100	Apr-June	12531	7810	8434
Thompson Falls (at) (15)	11470	100	Apr-Sept	15920	11705	11479
	10492	100	Apr-July	14809	10678	10500
	9002	100	Apr-June	13188	8322	9009
Cabinet Gorge (at) (15)	12268	100	Apr-Sept	- -	- -	12211
	11238	100	Apr-July	- -	- -	11186
	9629	100	Apr-June	- -	- -	9584
BLACKFOOT RIVER						
Bonner (near)	972	114	Apr-Sept	1132	851	851
	876	114	Apr-July	1037	742	767
	756	114	Apr-June	927	566	663
BITTERROOT RIVER						
Darby (near)	494	94	Apr-Sept	740	540	525
	458	94	Apr-July	701	500	487
	400	93	Apr-June	649	394	429
At Mouth (16)	1282	94	Apr-Sept	1948	1504	1369
	1196	94	Apr-July	1837	1418	1270
	1056	96	Apr-June	1667	1075	1105

(14) Difference in observed flow, Clark Fork above Missoula & Blackfoot at Bonner

(15) Observed flow plus change in Storage in Flathead Lake & Hungry Horse Res.

(16) Difference in observed flow, Clark Fork above and below Missoula

(##) Preliminary data furnished by U. S. Geological Survey, subject to correction

MONTANA STREAM-FLOW FORECASTS MARCH 1, 1958

UPPER COLUMBIA RIVER IN MONTANA	Seasonal Stream-Flow in Thousands of Acre Feet					
	FORECAST RUNOFF	% 15-Yr. AVG.	FORE-CAST PERIOD	Measured Runoff		1938-52 Average
				1956##	1955	
FLATHEAD RIVER						
Columbia Falls (near)	1689	98	Apr-Sept	2308	1745	1729
(North Fork)	1538	98	Apr-July	2139	1576	1575
	1325	98	Apr-June	1864	1233	1350
Columbia Falls (at) (17)	5432	97	Apr-Sept	7164	5707	5619
	5064	97	Apr-July	6720	5268	5214
	4438	98	Apr-June	5959	4208	4530
Polson (near) (15)	6314	97	Apr-Sept	8603	6594	6612
	5873	95	Apr-July	8080	6111	6150
	5077	95	Apr-June	7137	4857	5317
MIDDLEFORK FLATHEAD RIVER						
West Glacier (near)	1588	96	Apr-Sept	2093	1682	1659*
	1470	95	Apr-July	1956	1551	1540*
	1241	93	Apr-June	1712	1224	1330*
SOUTH FORK FLATHEAD RIVER						
Columbia Falls (near) (17)	2030	99	Apr-Sept	2593	2085	2058
(Net inflow to Hungry	1927	99	Apr-July	2488	1977	1950
Horse Reservoir)	1727	99	Apr-June	2279	1630	1727
SWAN RIVER						
Big Fork (near)	697	119	Apr-Sept	750	570	584
	620	120	Apr-July	676	499	518
	516	121	Apr-June	581	518	427

(15) Observed flow plus change in Storage in Flathead Lake & Hungry Horse Res.

(17) Observed flow plus change in Storage in Hungry Horse Reservoir

(*) Less than 15 years in 1938-52 period. Average for 15 years nearest the base period

(##) Preliminary data furnished by U. S. Geological Survey subject to correction

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

Summary of Snow Survey Data by Tributary Watersheds as of March 1, 1958

TRIBUTARY BASINS	No. of Courses Averaged	No. Years Used	1958 Snow Water Equivalent Expressed as Percent of		
			1957	1956	Average %
MISSOURI RIVER BASIN IN MONTANA					
JEFFERSON RIVER	25	5-15	94	69	84
Rock-Beaverhead	6	10-15	99	102	87
Horse Prairie	6	10	90	58	82
Big Hole	9	5-15	90	66	94
Wise River	3	10-15	102	64	86
Ruby River	1	13	150	80	93
MADISON RIVER	7	15	70	57	79
GALLATIN RIVER	4	15	103	78	99
MISSOURI MAIN STEM	10	15	120	81	93
Teton River	3	10	68	54	56
Sun River	7	9-15	82	61	67
Marias River	1	15	82	67	90
Milk River	1	15	48	78	57
Musselshell River	1	15	130	51	82
UPPER YELLOWSTONE (MONTANA)	8	11-15	76	49	78
COLUMBIA RIVER BASIN IN MONTANA					
KOOTENAI RIVER ABOVE LIBBY, MONTANA	11	7-15	80	67	82
FLATHEAD RIVER	19	7-15	102	85	95
UPPER CLARK FORK	19	5-15	112	77	103
BITTERROOT RIVER	5	7-15	96	66	92

INDEX TO MONTANA & NORTHERN WYOMING SNOW COURSES

Drainage Basin and Course Name	Montana Number	Elev.	Location Sec. Lat.	Location Twp.	Range Long.	Record Began	Measuring Dates	Measured By
MISSOURI RIVER DRAINAGE								
JEFFERSON RIVER								
(ROCK-BEAVERHEAD)								
Lakeview Ridge	11E3	7400	27	14S	2W	1948	3,4,5	10
Lakeview Canyon	11E4	6930	26	14S	2W	1948	3,4,5	10
Limekiln	12E2	6950	5	15S	9W	1948	3,4	1
White Pine Ridge	12E1	8850	18	14S	9W	1948	3,4	1
(HORSE PRAIRIE)								
Bloody Dick	13D10	7600	12	8S	16W	1948	3,4	1
Gold Stone	13D9	8100	11	8S	16W	1948	3,4	1
Lemhi Pass	13E1	7480	9	10S	15W	1948	3,4	1
Terrell Creek	13D12	6650	14	9S	15W	1948	3,4	1
Trail Creek	13E2	7090	15	10S	15W	1948	3,4	1
Selway Junction	13D11	6800	27	8S	15W	1948	3,4	1
(BIG HOLE)								
Big Hole Pass	13D3	7400	28	3S	16W	1948	3,4	1
Big Nole Pass-Be.	13D4	6900	24	3S	18W	1948	3,4	1
East Boundary	13D5	6700	22	3S	17W	1948	3,4	1
Gibbons Pass	13D2	7100	4	2S	19W	1934	1,2,3,4,5	1,3
Jahnke Creek	13D8	7340	25	7S	16W	1948	3,4	1
Miner Forks	13D6	7300	24	6S	17W	1948	3,4	1
Miner Lake	13D7	6720	10	6S	16W	1945	3,4,5	1
(WISE RIVER)								
Anderson Mdw.	13D14	7000	18	3S	12W	1948	3,4	1
Elk Norn	13D15	8450	15	4S	12W	1934	3,4,5	3
Wise River	13D13	6300	15	2S	12W	1948	3,4	1
(RUBY RIVER)								
Cottonwood	11E2	5900	24	10S	3W	1948	3,4	1
Cottonwood (Upper)	11E1	8400	30	10S	2W	1948	3,4	1
Flashlight	12D3	6950	22	8S	7W	1945	3,4,5	1
Tobacco Root	12D2	6900	13	4S	4W	1948	3,4	1
Vigilante	11D1	6125	28	9S	3W	1948	3,4	1
MADISON RIVER								
Hebgen	11E5	6550	22	11S	3E	1934	1,2,3,4,5	3
West Yellowstone	11E7	6700	34	13S	5E	1934	1,2,3,4,5	3
Norris Basin	10E2	7500	44°-42'		110°-42'	1935	3,4	6
GALLATIN RIVER								
Devil's Slide	10D4	8100	14	5S	6E	1935	2,3,4,5	2,1
Hood Meadow	10D3	6600	22	4S	6E	1934	2,3,4,5	2,1
Mystic Lake	10D2	6600	30	3S	7E	1935	2,3,4	7
New World	10D1	6700	24	3S	6E	1939	1,2,3,4,5	7
21-Mile	11E6	7150	1	11S	5E	1934	1,2,3,4,5	3
MISSOURI RIVER MAIN STEM								
Chessman Reservoir	12C5	6200	2	8N	5W	1936	1,2,3,4,5	3
Crystal Lake	9C1	6100	19	12N	18E	1941	3,4	1,2
Grasshopper	10C2	7000	19	9N	8E	1938	3,4	2
Kings Hill	10C1	7950	35	13N	7E	1937	3,4,5	3
Picnic Grounds	12C6	6500	10	5N	6W	1940	2,3,4	4
Pipestone Pass	12D1	7200	11	1N	7W	1938	2,3,4,5	1
Stemple Pass	12C1	6900	16	13N	7W	1934	3,4,5	3
Ten Mile Creek L	12C2	6250	13	8N	6W	1935	1,2,3,4,5	3
Ten Mile Creek M	12C3	6800	13	8N	6W	1934	1,2,3,4,5	3
Ten Mile Creek U	12C4	8000	19	8N	5W	1935	1,2,3,4,5	3
(TETON RIVER)								
Freight Creek	12A1	6000	13	26N	10W	1948	3,4	1
Waldron Creek	12B2	5600	16	25N	9W	1948	3,4	1
West Fork	12B1	6000	6	25N	9W	1948	3,4	1
(SUN RIVER)								
Benchmark	12B8	5500	9	20N	10W	1948	3,4	1
Cabin Creek	12B6	5400	33	23N	10W	1949	3,4	1,2
5-Bull	12B9	5600	36	20N	10W	1948	3,4	1,2
Gates Park	12B5	5300	31	24N	10W	1949	3,4	1,2
Goat Mountain	12B7	7000	20	22N	10W	1934	3,4	3
Wrong Ridge	12B3	6800	17	25N	10W	1949	3,4	1,2
Wrong Creek	12B4	5700	32	25N	10W	1949	3,4	1,2
(MARIAS RIVER)								
Marias Pass	13A5	5250	34	30N	14W	1936	1,2,3,4,5	3
(MILK RIVER)								
Rocky Boy	9A1	5200	15	28N	16E	1941	3,4	7
(MUSSELSHELL RIVER)								
Grasshopper	10C2	7000	19	9N	8E	1938	3,4	2
MISSOURI RIVER DRAINAGE (cont.)								
(UPPER YELLOWSTONE)								
Camp Senia	9D1	7890	2	8S	18E	1937	4	1
Canyon	10E3	7750	44°-44'		110°-30'	1938	1,2,3,4,5	6
Cooke City	10D7	7400	25	9S	14E	1937	1,2,3,4,5	6
Crevice Mt.	10D5	8400	22	9S	9E	1935	3,4	2
Independence	10D6	8000	22	7S	12E	1941	3,4	1
Lake Camp	10E4	7850	44°-34'		110°-24'	1937	1,2,3,4,5	6
Lupine Creek	10E1	7300	44°-54'		110°-37'	1938	1,2,3,4,5	6
Lodgepole	9E1	8200	32	56N	106W	1940	2,3,4,5	1,4
(SHIELDS RIVER)								
Porcupine	10C3	6500	10	4N	10E	1938	3,4	1
LOWER YELLOWSTONE								
(WIND RIVER) Wyoming								
Big Warm	9F12	8800	36	42N	109W	1955	2,3,4,5	1
Brooks Lake #3	10F8	9200	23	44N	110W	1939	2,3,4,5	1
Burroughs Creek	9F4	8800	15	43N	107W	1948	2,3,4,5	1
Dinwoodie	9F10	10000	21	39N	105W	1948	2,3,4,5	1
Dry Creek	9F9	9500	34	4N	6W	1948	2,3,4,5	1
DuNoir	9F6	8750	27	42N	108W	1940	2,3,4,5	1
East Fork	9F13	9200	23	44N	104W	1956	2,3,4,5	1
Geyser Creek	9F7	8500	12	41N	108W	1948	2,3,4,5	1
Little Warm	9F8	9500	24	41N	108W	1948	2,3,4,5	1
Sheridan R.S. #1	9F5	7500	3	42N	109W	1939	2,3,4,5	1
Sheridan R.S. #2	9F14	7500	3	42N	109W	1955	2,3,4,5	1
T-Cross Ranch	9F3	8000	1	43N	107W	1940	2,3,4,5	1
Togwotee Pass	10F9	9600	29	44N	110W	1936	2,3,4,5	11
(POPO AGIE RIVER) Wyoming								
Blue Ridge	8G2	9500	23	31N	101W	1939	2,3,4,5	1
Bruce's Camp	8G5	6500	24	32N	101W	1955	2,3,4	1
Hobb's Park	9G3	10000	22	2S	3W	1948	2,3,4,5	1
Mosquito Park R.S.	9G4	9500	23	2S	3W	1940	2,3,4,5	1
Sawmill Glade	8G1	8500	3	31N	101W	1939	2,3,4,5	1
South Pass	8G3	9000	13	30N	101W	1939	2,3,4,5	1
St. Lawrence	9F11	9000	26	1N	4W	1940	2,3,4,5	1
Trout Creek	9G2	8400	5	2S	2W	1948	2,3,4,5	1
(OWL CREEK) Wyoming								
Beavers Mill	9F2	8900	6	43N	102W	1948	2,3,4,5	1
Owl Creek	8F1	8700	36	43N	101W	1948	2,3,4,5	1
(GREYBULL RIVER) Wyoming								
Timber Creek #1	9E2	8800	25-	47N	103W	1948	2,3,4,5	1
Timber Creek #2	9E3	8800	25	47N	103W	1955	2,3,4,5	1
Wood River #1	9F1	8000	28	46N	103W	1939	2,3,4,5	1
Wood River #2	9F15	8000	28	46N	103W	1956	2,3,4,5	1
(SHOSHONE RIVER) Wyoming								
East Entrance	10E6	7000	17	52N	109W	1948	1,2,3,4,5	6
Sylvan Pass	10E5	7100	12	52N	110W	1936	1,2,3,4,5	6
(NOWOOD CREEK) Wyoming								
Cold Springs Camp	7E25	8700	1	50N	88W	1956	2,3,4,5	1
Medicine Lodge Lks	7E24	9500	7	51N	87W	1956	2,3,4,5	1
Munkers Pass	7E8	9700	11	48N	85W	1950	2,3,4,5	1
North Powder	7E36	8300	20	47N	85W	1956	2,3,4,5	1
Onion Gulch	7E27	8100	31	48N	85W	1956	2,3,4,5	1
Tensleep Lake	7E26	9075	33	50N	86W	1956	2,3,4,5	1
Tensleep R.S.	7E7	8300	30	49N	86W	1935	2,3,4,5	1
Tyrell R.S.	7E35	8300	30	49N	86W	1956	2,3,4,5	1
(SHELL CREEK) Wyoming								
Bald Mountain	7E21	9600	33	56N	91W	1956	2,3,4,5	1
Beaver-Tongue Div.	7E20	9200	12	55N	91W	1956	2,3,4,5	1
Bone-Spring Div.	7E18	9200	32	55N	89W	1956	2,3,4,5	1
Granite Creek Camp	7E22	7800	15	53N	89W	1956	2,3,4,5	1
Granite Pass	7E17	8950	19	54N	88W	1956	2,3,4,5	1
Horse-Trail Div.	7E19	9200	29	55N	90W	1956	2,3,4,5	1
Ranger Creek	7E4	8800	32	53N	88W	1935	2,3,4,5	1
Shell Creek	7E23	9600	12	52N	88W	1956	2,3,4,5	1
(PORCUPINE CREEK) Wyoming								
Five Spgs. Falls	7E31	7500	19	56N	92W	1956	2,3,4,5	1
Medicine Wheel	7E30	9000	24	56N	92W	1956	2,3,4,5	1
(TONGUE RIVER) Wyoming								
Beaver Tongue Div.	7E20	9200	12	55N	91W	1956	2,3,4,5	1
Big Goose #1	7E2	7700	4	53N	86W	1935	2,3,4,5	1
Big Goose #2	7E32	7700	4	53N	86W	1955	2,3,4,5	1
Bone-Spring Div.	7E18	9200	32	55N	89W	1956	2,3,4,5	1
Burgess R.S. #1	7E1	7900	36	56N	89W	1950	2,3,4,5	1
Burgess R.S. #2	7E33	7900	36	56N	89W	1955	2,3,4,5	1
Dome Lake #1	7E3	8800	11	53N	87W	1950	2,3,4,5	1
Dome Lake #2	7E34	8800	11	53N	87W	1950	2,3,4,5	1
Gloom Creek	7E14	9300	32	55N	87W	1956	2,3,4,5	1
Granite Pass	7E17	8950	19	54N	88W	1956	2,3,4,5	1
MISSOURI RIVER DRAINAGE (cont.)								
(TONGUE RIVER cont.)								
Norse Trail Div.	7E19	9200	29	55N	90W	1956	2,3,4,5	1
Lake Geneva	7E16	9000	7	52N	86W	1956	2,3,4,5	1
North Tongue	7E15	8800	17	55N	89W	1956	2,3,4,5	1
Sibley Lake	7E11	8000	10	55N	88W	1956	2,3,4,5	1
Sucker Creek	7E12	9000	19	55N	87W	1956	2,3,4,5	1
Steamboat Point	7E10	7500	32	56N	87W	1956	2,3,4,5	1
Wood Rock G.S.	7E13	8500	3	54N	88W	1956	2,3,4,5	1
(POWDER RIVER) Wyoming								
Crazy Woman	6E2	8200	6	47N	84N	1956	2,3,4,5	1
Muddy Creek O.S.	6E1	7800	2	48N	84N	1956	2,3,4,5	1
Munkers Pass	7E8	9700	11	48N	85W	1950	2,3,4,5	1
North Powder #2	7E36	8300	20	47N	85W	1956	2,3,4,5	1
Onion Gulch	7E27	8100	31	48N	85W	1956	2,3,4,5	1
Soldier Park	7E5	8700	36	51N	85W	1950	2,3,4,5	1
Sour Dough	7E6	8500	17	49N	84W	1936	2,3,4,5	1
COLUMBIA RIVER BASIN								
KOOTENAI RIVER								
Baree Mountain	15B1	6000	1	25N	31W	1937	4,5,5½	2
Blue Bird Basin	14A1	6800	24	37N	26W	1937	4,5,5½	1,2
Red Mountain	15A1	6000	4	36N	29W	1937	3,4,5,5½	1,2
Weasel Divide	14A7	5450	8	37N	24W	1955	4,5,5½	1,2
FLATHEAD RIVER								
Basin Creek	13B14	5000	11	19N	12W	1951	2,3,4,5	2
Big Creek	13B3	6750	6&7	22N	18W	1941	3,4,5	5
Brush Creek	14A4	5000	13	30N	26W	1937	3,4,5	1,2
Cattle Queen	13A1	4700	7	35N	17W	1939	3,4,5	6
Desert Mountain	13A2	5600	24	31N	19W	1937	1,2,3,4,5	1,2
Hell Roaring Div.	14A3	5770	35	32N	22W	1942	3,4,5	1,2
Nolbrook	13B13	4530	18	21N	13W	1951	1,2,3,4,5	2
Kishenehn	14A6	4000	14	37N	22W	1954	4,5	6
Logan Creek	14A5	4300	34	30N	24W	1937	3,4,5	2
Marias Pass	13A5	5250	34	30N	14W	1934	1,2,3,4,5	3
Quintonkon	13A13	3800	11	26N	17W	1951	2,3,4,5	1,2
Spotted Bear Mt.	13B2	7000	23	25N	15W	1948	3,4,5	1,2
Strawberry Lake	13A10	6500	11	28N	19W	1948	3,4,5	2
Trinkus Lake	13B1	6500	9	25N	17W	1948	3,4,5	2
Trout Lake	13A12	3600	21	28N	17W	1948	3,4,5	1,2
Twin Creeks	13B11	3580	14	26N	16W	1951	2,3,4,5	1,2
Upper Holland Lk.	13B5	7000	28	20N	16W	1948	3,4,5	2
CLARK FORK								
Baree Mountain	15B1	6000	1	25N	31W	1937	4,5,5½	2
Coyote Hill	13B10	4200	12	18N	16W	1952	1,2,3,4,5	2
El Dorado Mine	13C9	7800	23	8N	12W	1946	4	1
Freezeout Summit	15B10	6800	21	15N	27W	1951	4,5	2
Gold Creek Lk.	13C10	7200	14	8N	12W	1946	4	1
Hoodoo Summit	15C1	6200	9&16	14N	27W	1937	4,5	2
Intergaard	13C4	6450	6	5N	13W	1939	2,3,4	4
Lubrecht Forest #6	13C8	5400	11	14N	15W	1951	1,2,3,4,5	12
North Fork Jocko	13B7	6330	3	17N	17W	1941	3,4,5	5
Picnic Grounds	12C6	6500	10	5N	6W	1940	2,3,4	4
Pipestone Pass	12D1	7200	11	1N	7W	1938	2,3,4,5	1
Slide Rock Mt.	13C2	7100	26	10N	16W	1937	4	1
Southern Cross	13C5	6500	8	5N	13W	1939	2,3,4	4
Stemple Pass	12C1	6900	16	13N	7W	1934	3,4,5	3
Storm Lake	13C7	7780	19	4N	13W	1939	2,3,4	1
Stuart Mill	13C6	6500	19	5N	13W	1939	2,3,4	4
Stuart Mountain	13C1	7400	6	14N	18W	1936	4	1,2
TV Mountain	14B1	6800	33	15N	19W	1956	1,2,3,4,5	1
BITTERROOT RIVER								
East Fork R.S.	13D1	5400	16	2N	17W	1937	4	1
Gibbons Pass	13D2	7100	4	2S	19W	1934	1,2,3,4,5	3,1
Lolo Pass	14C5	5230	16	38N	15E	1956	3,4,5,5½	2
Mud Creek Pasture	14C1	4500	24	11N	24W	1937	3	1
Nez Perce Camp	14D2	5580	19&20	1S	23W	1937	3,4,5	1
Powell R.S.	14C6	4230	33	37N	14E	1956	3,4,5,5½	2
Skalkaho Summit	13C3	7259	30	6N	17W	1937	4	1
SASKATCHEWAN RIVER BASIN								
ST. MARY RIVER								
Josephine Upper	13A15	6000	48°-50'		113°-42'	1956	5	3,9
Josephine Lower #9	13A14	4900	48°-47'		113°-41'	1956	5	
Mount Allen #7	13A7	7000	48°-44'		113°-40'	1922	5	3,9
Piegan Pass #4	13A4	5000	48°-46'		113°-40'	1922	5	3,9
Piegan #6	13A6	6500	48°-45'		113°-42'	1922	5	3,9
Ptarmigan #8	13A8	5800	48°-50'		113°-42'	1922	5	3,9

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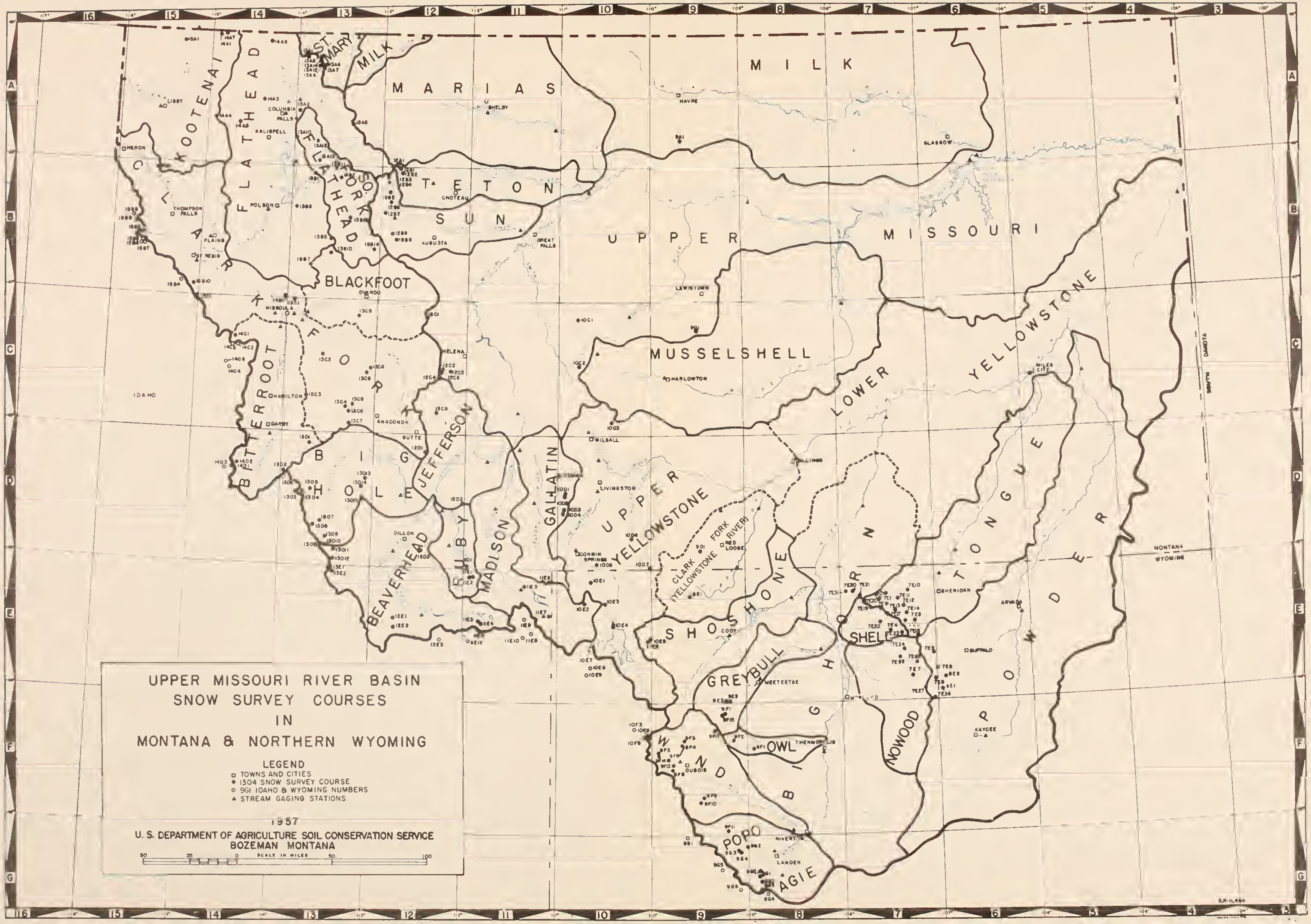
a. Numerals 1,2,3,4 and 5 refer to January 1, February 1, March 1, April 1 and May 1.

b. Numerals refer to Agency that secures the snow survey as follows:

1. Soil Conservation Service
2. U. S. Forest Service
3. U. S. Geological Survey
4. Montana Power Company
5. U. S. Indian Service
6. National Park Service
7. Montana Experiment Station
8. City of Bozeman
9. Dominion Water & Power Bureau
10. U. S. Fish and Wildlife Service
11. U. S. Bureau of Reclamation
12. Montana State Forestry School


UPPER MISSOURI RIVER BASIN
SNOW SURVEY COURSES
IN
MONTANA & NORTHERN WYOMING

1957
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE
BOZEMAN MONTANA

MONTANA SNOW SURVEYS MARCH 1, 1958

MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENTS						Prior Years of Record
			1958			Past Record			
						Water Content (In.)			
			Date of Survey	Snow Depth (In.)	Water Content (In.)	1957	1956	1938-52 Average	
JEFFERSON RIVER									
(Rock-Beaverhead)									
Lakeview Canyon	11E4	6930	2/28	35	7.7	9.7	7.8	10.3**	10
Lakeview Ridge	11E3	7400	2/28	30	7.3	8.0	6.9	8.4**	10
Limekiln	12E2	6950	2/11	8	1.8	0.7	1.1	1.2**	10
White Pine Ridge	12E1	8850	2/11	29	6.6	2.6	4.5	4.4**	10
#Camp Creek	12E3	6800	2/28	31	7.2	8.1	8.6	9.2	22
#Kilgore	11E12	6200	2/28	27	7.2	9.2	8.3	9.9	21
(Horse Prairie)									
Bloody Dick	13D10	7600	2/16	35	7.9	10.0	13.8	10.3**	10
Gold Stone	13D9	8100	2/16	41	10.0	12.0	18.0	13.1**	10
Lemhi Pass	13E1	7400	2/13	29	6.4	5.7	10.5	7.4**	10
Selway Junction	13D11	6800	2/12	26	5.4	7.0	10.4	7.2**	10
Terrell Creek	13D12	6650	2/12	19	4.3	4.0	6.4	4.3**	10
Trail Creek	13E2	7090	2/13	28	6.0	5.9	9.8	6.7**	10
(Big Hole)									
Big Hole Pass	13D3	7440	2/17	46	12.4	12.6	18.2	15.1**	10
Big Hole Pass (bl)	13D4	6900	2/17	42	10.9	11.6	16.2	13.0**	10
East Boundary	13D5	6700	2/17	25	5.8	6.0	8.4	7.1**	10
Gibbons Pass	13D2	7100	2/27	58	18.3	20.9	27.2	20.4	24
Jahnke Creek	13D8	7340	2/16	33	7.5	10.2	11.8	9.7**	10
Miner Forks	13D6	7300	2/15	35	8.2	10.3	14.8	10.7**	10
Miner Lake	13D7	6720	2/15	24	5.2	5.6	9.9	7.1**	13
#Moose Creek	13D16	6200	2/26	44	13.4	13.9	19.4	14.5	20
Storm Lake	13C7	7780	2/20	32	9.0	9.0	15.8	11.2**	5
(Wise River)									
Anderson Meadow	13D14	7000	2/18	25	5.6	5.3	9.3	7.4**	10
Elk Horn	13D15	8450	2/28	31	7.6	7.9	12.8	8.1	23
Wise River	13D13	6300	2/18	18	4.4	4.1	5.4	4.9**	10
(Ruby River)									
Flashlight	12D3	6950	2/20	14	3.6	2.4	4.5	3.9**	13

* Less than 15 years in 1938-52 period. Average for 15 years nearest the base period

** Average for period of record.

# Adjacent Basin

MONTANA SNOW SURVEYS MARCH 1, 1958

MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE	No.	Elev.	Date of Survey	SNOW COVER MEASUREMENTS					Prior Years of Record
				1958		Past Record Water Content (In.)			
				Snow Depth (In.)	Water Content (In.)	1957	1956	1938-52 Average	
MADISON RIVER									
Hebgen	11E5	6550	2/27	35	9.1	12.3	13.5	11.2	24
Norris Basin	10E2	7500	2/28	29	7.9	9.1	12.5	8.6*	15
21-Mile	11E6	7150	2/28	40	11.5	17.5	22.9	14.7	24
W. Yellowstone	11E7	6700	2/27	28	6.5	11.8	14.8	10.4	24
#Big Springs	11E9	6500	2/26	49	14.4	22.0	23.8	18.3	22
#Island Park	11E10	3600	2/27	42	11.8	15.4	19.8	14.6	22
#Valley View	11E8	6500	2/26	38	9.2	13.6	17.1	13.3**	13
GALLATIN RIVER									
Devil's Slide	10D4	8100	3/1	59	17.2	14.2	18.6	16.0	23
Hood Meadow	10D3	6600	3/2	36	8.6	6.2	7.6	7.1	23
Mystic Lake	10D2	6600	Est.	25	6.2	-	-	-	-
New World	10D1	6700	2/28	39	8.5	5.6	10.0	8.6*	16
21-Mile	11E6	7150	2/28	40	11.5	17.5	22.9	14.7	21
MISSOURI RIVER MAIN STEM									
Chessman Res.	12C5	6200	2/28	11	1.9	2.1	5.4	4.3	22
Crystal Lake	9C1	6100	2/28	61	9.7	7.6	10.2	10.2*	17
Grasshopper	10C2	7000	2/28	16	3.5	2.7	6.9	4.3	20
King's Hill	10C1	7950	2/28	57	11.2	10.0	9.6	11.3	24
Picnic Grounds	13C6	6500	2/28	21	4.0	3.9	5.6	4.3**	13
Pipestone Pass	12D1	7200	2/28	19	3.7	3.6	5.9	4.2	20
Stemple Pass	12C1	6900	2/27	35	8.9	8.1	10.4	8.4	24
Tenmile, Lower	12C2	6250	3/2	20	4.9	4.9	7.5	5.9	23
Tenmile, Middle	12C3	6800	3/1	35	8.3	6.8	7.5	8.6	24
Tenmile, Upper	12C4	8000	3/1	44	11.2	9.9	14.0	11.2	23
(Teton River)									
Fright Creek	12A1	6000	2/24	32	9.5	13.8	15.7	15.6**	10
Waldron Creek	12B2	5600	2/24	16	3.6	5.4	8.0	6.9**	10
West Fork	12B1	6000	2/24	25	7.8	11.8	14.7	14.9**	10
(Sun River)									
Benchmark	12B8	5500	2/26	20	4.6	5.8	6.5	9.0**	9
Cabin Creek	12B6	5400	2/27	18	4.5	5.8	8.1	6.8**	9
5-Bull	12B9	5600	2/26	14	3.1	4.2	--	7.0**	9
Gates Park	12B5	5300	2/28	28	7.6	8.8	11.7	10.1**	9
Goat Mountain	12B7	7000	2/25	26	6.6	9.4	13.2	8.8	24
Wrong Creek	12B4	5700	4/1	39	12.3	13.0	16.2	15.1**	9
Wrong Ridge	12B3	6800	4/2	48	15.2	18.6	25.5	21.2**	9

* Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.
** Average for period of record.
# Adjacent Basin
E Estimated

MONTANA SNOW SURVEYS MARCH 1, 1958

MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE	No.	Elev.	Date of Survey	SNOW COVER MEASUREMENTS 1958 Snow Depth (In.)	Water Content (In.)	Past Record Water Content (In.) 1957	1956	1938-52 Average	Prior Years of Record
MISSOURI RIVER MAIN STEM (Cont'd)									
(Marias River)									
Marias Pass	13A5	5250	2/27	42	14.0	17.2	20.8	15.6	24
(Milk River)									
Rocky Boy	9A1	5250	3/3	14	2.8	5.8	3.6	4.9*	17
(Musselshell)									
Grasshopper	10C2	7000	2/28	16	3.5	2.7	6.9	4.3	20
UPPER YELLOWSTONE									
Camp Senia	9D1	7890	2/27	19	4.3	3.1	6.3	4.7**	13
Canyon	10E3	7750	2/28	42	10.3	14.8	18.7	10.7**	19
Cooke City	10D7	7400	2/27	25	4.6	7.7	9.6	7.0	21
Crevice Mt.	10D5	8400	2/28	22	5.3	5.3	7.9	8.3*	19
Lake Camp #1	10E4	7850	2/28	34	7.0	7.4	17.5	8.8*	18
Lake Camp #2		7850	2/28	29	5.9	-	-	-	-
Lodgepole, Wyo.	9E1	8200	3/2	27	6.8	9.2	14.2	- -	2
Lupine	10E1	7300	2/27	24	5.6	9.8	13.4	8.9*	18
#Astor Creek	10E8	7700	2/27	69	21.8	29.8	44.5	24.5	39
#Thumb Divide	10E7	7900	2/27	52	15.3	19.8	33.1	21.9**	11
(Shields River)									
Porcupine	10C3	6500	2/28	27	4.5	4.8	7.6	5.2	15

* Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.
** Average for period of record.
# Adjacent Basin

MONTANA SNOW SURVEYS MARCH 1, 1958

COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENTS 1958 Date of Survey	1958 Snow Depth (In.)	1958 Water Content (In.)	Past Record Water Content (In.) 1957	Past Record Water Content (In.) 1956	Past Record Water Content (In.) 1938-52 Average	Prior Years of Record
KOOTENAI RIVER (above Libby, Montana)									
Blue Bird Basin	14A1	6800	Est.	75	27.5	-	-	-	-
Brush Creek	14A4	5000	2/27	42	11.7	11.4	15.6	13.0**	11
Fernie	Can	3500	2/28	21	6.7	8.4	13.2	8.1*	18
Ferguson	Can	3000				17.2	22.3	19.2**	6
Gray Creek	Can	5100	2/27	40	12.6	17.7	17.0	17.2**	9
Kimberley	Can	3800	2/28	17	5.2	7.1	11.8	6.8*	17
Marble Canyon	Can	5000	3/1	39	11.2	15.5	13.1	14.2**	11
Nelson	Can	3050	2/28	41	14.6	15.7	21.8	14.0*	18
New Fernie	Can	4100	2/28	36	12.3	13.8	9.8	14.2**	7
Old Glory	Can	7000	2/28	82	25.7	-	-	-	-
Red Mountain	15A1	6000	2/24	41	13.4	17.0	22.0	15.6	21
Sinclair Pass	Can	4500	3/1	13	3.6	6.1	6.5	6.1**	10
Sullivan Mine	Can	5100	2/27	39	10.6	12.3	17.5	13.4**	12
Upper Elk River	Can	4400	2/27	17	5.3	9.4	13.6	8.8**	10
Weasel Divide	14A7	5450	2/25	70	25.3	-	-	-	-
FLATHEAD RIVER									
Basin Creek	13B14	5000	3/1	27	8.4	5.7	10.6	8.8**	7
Big Creek	13B3	6750	2/27	121	42.9	34.7	42.7	33.5*	17
Blue Bird Basin	14A1	6800	Est.	75	27.5	-	-	-	-
Brush Creek	14A4	5000	2/27	42	11.7	11.4	15.6	13.0**	11
Cattle Queen	13A1	4700	2/27	85	26.1	25.6	32.2	30.0**	13
Coyote Hill	13B10	4200	2/28	33	5.9	9.4	11.2	9.9**	11
Desert Mountain	13A2	5600	2/28	44	12.4	13.5	18.2	13.1**	14
Goat Mountain	12B7	7000	2/25	26	6.6	9.4	13.2	8.8	24
Hell Roaring Div.	14A3	5700	2/26	81	23.3	27.1	27.2	27.8**	8
Holbrook	13B13	4530	3/1	30	9.0	6.7	10.6	9.5**	7
Kishenehn	14A2	4300	3/3	27	8.0	10.0	8.1	10.4**	13
Logan Creek	14A5	4300	2/27	34	8.5	8.8	11.6	8.9**	11
Marias Pass	13A5	5250	2/27	42	14.0	17.2	20.8	15.6	24
Mineral Creek	13A16	4500	2/28	57	16.9	18.3	-	-	1
N. Fork Jocko	13B7	6330	2/28	123	43.4	35.6	43.9	36.0	17
Spotted Bear Mt.	13B2	7000	3/3	35	11.3	12.0	15.0	14.8**	10
Strawberry Lake	13A10	6500	2/28	112	32.9	33.7	36.0	35.7**	7
Trinkus Lake	13B1	6500	3/4	110	37.5	30.8	37.5	35.4**	8
Trout Lake	13A12	3600	3/2	51	13.0	14.1	15.0	16.4**	10
Twin Creeks	13B11	3580	3/2	39	10.8	10.3	11.1	11.0**	7
Upper Holland	13B5	7000	2/27	84	23.6	27.2	32.5	31.0**	8
Weasel Divide	14A7	5450	2/25	70	25.3	-	-	-	-

* Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.

** Average for period of record.

MONTANA SNOW SURVEYS MARCH 1, 1958

			SNOW COVER MEASUREMENTS						
			1958			Past Record Water Content (In.)			Prior Years of Record
COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE	No.	Elev.	Date of Survey	Snow Depth (In.)	Water Content (In.)	1957	1956	1938-52 Average	
CLARK FORK									
Coyote Hill	13B10	4200	2/28	33	5.9	9.4	11.2	9.9**	11
Chessman Res.	12C5	6200	2/28	11	1.9	2.1	5.4	4.3	22
East Fork R.S.	13D1	5400	2/24	24	6.5	5.8	8.7	5.4**	7
Eldorado Mine	13C9	7800	2/22	47	13.6	13.1	20.7	16.1**	5
Fish Lake, Ida.	21B4	5000	3/1	93	35.2	33.6	- -	36.0**	5
Fred Burr Pass	13C11	8000	2/21	59	19.0	16.9	- -	- -	1
Gold Creek Lake	13C10	7200	2/22	39	11.0	10.6	16.2	13.3**	5
Hoodoo Creek	15C1	6200				59.6	- -	50.0**	5
Intergaard	13C4	6450	2/28	31	6.8	6.5	8.0	6.1	22
Lubrecht For. #6	13C8	5400	2/28	19	4.1	3.1	6.2	4.3**	7
N. Fork Jocko	13B7	6330	2/28	123	43.4	35.6	43.9	36.0*	17
Picnic Grounds	12C6	6500	2/28	21	4.0	3.9	5.6	4.4*	13
Pipestone Pass	12D1	7200	2/28	19	3.7	3.6	5.9	4.2	20
Red Lion	13C12	7000	2/21	44	12.2	-	-	-	-
Slide Rock Mt.	13C2	7100	3/4	39	9.9	9.7	- -	- -	3
Southern Cross	13C5	6500	2/28	25	5.6	5.8	6.0	4.6	22
Stemple Pass	12C1	6900	2/27	35	8.9	3.6	5.9	4.2	22
Storm Lake	13C7	7780	2/20	32	9.0	9.0	15.8	11.2**	5
Stuart Mill	13C6	6500	2/28	26	5.5	5.4	6.6	5.2	22
Stuart Mt. #1	13C1	7400	3/2	88	29.4	27.2	- -	24.4	15
Tenmile, Lower	12C2	6250	3/2	20	4.9	4.9	7.5	5.9	23
Tenmile, Middle	12C3	6800	3/1	35	8.3	6.8	7.5	8.6	24
Tenmile, Upper	12C4	8000	3/1	44	11.2	9.9	14.0	11.2	23
Thisted Ranch	14B2	3500	3/1	23	7.6	-	-	New	-
TV Mountain	14B1	6800	2/26	51	14.4	13.6	20.7	- -	2
#49 Meadows	15B3	5000	2/28	86	32.4	27.8	39.0	30.3*	18
#Lookout	15B2	5250	2/28	89	33.6	30.3	51.6	30.7	33
BITTERROOT									
East Fork R.S.	13D1	5400	2/24	24	6.5	5.8	8.7	5.4**	7
Gibbons Pass	13D2	7100	2/27	58	18.3	20.9	27.2	20.4	24
Nezperce Camp	14D2	5580	2/25	41	12.7	11.4	18.9	11.2*	18
Nezperce Pass	14D1	6575	2/25	34	11.0	12.4	19.8	15.2*	19
Packers Meadow	14C2	5700	2/26	59	21.2	21.1	- -	18.2**	14
Stuart Mt. #1	13C1	7400	3/2	88	29.4	27.2	- -	24.4	15
#Lolo Pass	14C5	5230	2/26	78	28.5	29.1	30.0	- -	2
#Moose Creek	13D16	6200	2/27	44	13.4	13.9	19.4	14.8*	20
#Powell R.S.	14C6	4230	2/27	37	12.7	14.3	- -	- -	1

* Less than 15 years in 1938-52 period. Average for 15 years nearest the base period.

** Average for period of record.

# Adjacent Basin

STATUS OF RESERVOIR STORAGE
MISSOURI RIVER IN MONTANA
March, 1958

BASIN & STREAM	RESERVOIR	USABLE CAPACITY 1000 A.F.	USABLE STORAGE - 1000 ACRE FEET				
			1958	1957	1956	1938-52 AVG.	YRS.
MISSOURI RIVER BASIN							
Beaverhead	Lima	84.0	26.4	6.4	19.9	64.5*	16
Madison River	Hebgen Lake	345.0	157.4	158.1	185.2	234.7	22
Madison River	Ennis Lake	41.0	38.8	38.4	32.5	34.1	22
Hyalite Creek	Middle Creek	8.0	3.7	3.1	3.4	3.6**	6
Missouri River	Canyon Ferry	2043.0	1575.0	1488.0	1526.0	1272.0**	5
Missouri River	Hauser Lake & Lake Helena	62.5	59.0	62.5	65.6	46.2*	18
Missouri River	Lake Helena	10.4	9.2	10.4	11.6	7.7**	10
Missouri River	Holter Lake	81.9	76.7	78.8	44.2	53.3	22
N.Fk. Sun River	Gibson	105.0	29.0	39.6	70.7	59.6	22
N.Fk. Sun River	Willow Creek	32.3	17.8	23.4	26.7	12.9	22
N.Fk. Sun River	Pishkun	32.0	18.2	16.4	16.6	15.6	22
Marias River	Tiber	1316.0	625.2	628.0	37.3	--	2
Birch Creek	Swift	30.0		23.7	22.7	19.5	22
Dupuyer & Birch	Lake Francis	112.0		89.9	92.4	72.8	22
Judith River	Ackley Lake	5.8		--	4.2	4.2*	18
Missouri River	Ft. Peck 3/	19410.0	7748.0	5397.0	4729.0	10078.0*	17
Milk River	Fresno	127.2	55.9	75.1	66.6	56.2	18
Milk River	Nelson	66.8	49.8	51.4	39.9	28.5	22
W. Rosebud Cr.	Mystic Lake	20.8	7.4	6.0	6.2	8.0	22
Tongue River	Tongue River	73.9	9.0	10.8	27.0	9.9*	17
Swiftcurrent Cr.	Sherburne Lake	66.1	21.0	18.2	20.7	18.9	22
MISSOURI RIVER BASIN - WYOMING							
Shoshone River	Buffalo Bill	440.0	161.9	128.2	122.1	264.5	23
Wind River	Boysen	408.6	249.1	220.0	13.1	262.2**	6
Wind River	Pilot Butte	31.6	15.9	14.3	14.6	14.5	22
Bull Creek	Bull Lake	152.0	66.5	67.8	62.3	56.7*	19
Belle Fourche	Key Hole	190.0	1.9	14.1	20.9	12.1**	5
MISSOURI RIVER BASIN - NORTH DAKOTA							
Heart River	Heart Butte	54.8	55.3	43.7	45.0	53.1**	8
Heart River	Dickerson	4.3	4.2	3.2	2.6	3.7**	7
Missouri River	Garrison Lk.	13805.0	4448.0	535.2	853.0	---	3
MISSOURI RIVER BASIN - SOUTH DAKOTA							
Belle Fourche	Belle Fourche	185.0		37.0	78.2	--	3
Cheyenne River	Angostura	160.0		27.8	74.9	--	2
Cheyenne River	Deerfield	15.1	11.3	8.8	10.5	--	4
Grand River	Shadehill	84.0	79.4	133.4	128.1	134.4**	5
Missouri River	Ft. Randall	2401.6		1090.7	1453.8	--	4

* Less than 15 years in 1938-52 period. Average for 15 years nearest the base period
** Average for period of record
3/ Gross contents

STATUS OF RESERVOIR STORAGE
COLUMBIA RIVER IN MONTANA
March, 1958

BASIN & STREAM	RESERVOIR	USABLE CAPACITY 1000 A.F.	USABLE STORAGE - 1000 ACRE FEET				
			1958	1957	1956	1938-52 AVG.	YRS.
COLUMBIA RIVER BASIN							
Flint Creek	Georgetown Lk.	31.0	19.9	19.2	21.7	22.9*	17
S.Fk. Flathead	Hungry Horse	3500.0	2088.0	1802.0	2595.0	1544.7**	6
Flathead River	Flathead Lake	1791.0	872.6	849.8	858.2	679.2	50
Flathead River 6/	Camas Res.	42.8	26.1	29.9	34.3	21.1*	17
Flathead River 7/	Mission Valley	98.6	19.7	28.5	27.2	36.8*	17

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** Average for period of record

6/ Camas Reservoirs are shown as a sum of (4) small reservoirs on the west side of Flathead Lake located on Dry Creek and Little Bitterroot River

7/ Mission Valley Reservoirs are shown as a sum of (8) small reservoirs located south and east of Flathead Lake. Both Camas and Mission Valley reservoirs are operated by the Indian Irrigation Service.

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COOPERATIVE SNOW SURVEYS

Furnishes the basic data
necessary for forecasting
water supply for irrigation,
domestic and municipal water
supply, hydro-electric power
generation, navigation,
mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"